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Dated: October 22, 2015

A handwritten signature in black ink, appearing to read "Shane Mirkovich", written over a horizontal line.

Shane Mirkovich, COO  
For Net Transcripts, Inc.

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- CSB PUBLIC MEETING**  
**Q=Vanessa Allen Sutherland**  
**Q1=Manny Ehrlich, Jr.**  
**Q2=Kristen Kulinowski**  
**Q3=Rick Engler**  
**Q4=Donald Holmstrom**  
**Q5=Dan Tillema**  
**Q6=Att. Inv. Tamara Qureshi**  
**Q7=Inv. Steve Cutechen**  
**Q8=Kara Wenzel**  
**A=Betty LeBlanc**  
**A1=Brent Coon**  
**A2=Att. (Wilson)**  
**A3=(Robin Pitlado)**  
**A4=(Bob Simmel)**  
**A5=John Morawetz**  
**A6=(John Burgess)**  
**A7=(John McClen)**  
**A8=Dan Barton**

Q: ...to call the meeting to order. Good evening. And welcome to this public meeting of the U.S. Chemical Safety Board, or the CSB. I'm Vanessa Allen Sutherland, Chairperson and board member of the Chemical Safety Board. And joining me today are Board Members Manny Ehrlich, Kristen Kulinowski, and Rick Engler. Also joining is our acting general counsel, Kara Wenzel. And member, uh, members of the CSB investigative team. The CSB is an independent non-regulatory federal agency that investigates major chemical accidents at fixed facilities. The investigations examine all aspects of chemical accidents including physical causes related to equipment design as well as inadequacies and regulations, industry standards, or safety management systems. Ultimately we issue safety recommendations which are designed to help prevent similar accidents in the future. The purpose of this evening's meeting is for the CSB Investigative Team to present to the Board findings and draft recommendations from their ongoing investigation in to the fatal methyl mercaptan release that occurred at DuPont's LaPorte facility on November 15th, 2014. At this time we will have a moment of silence to remember the four victims killed as a result of this accident. They are Wade Baker, (Crystal Wise), and brothers (Gilbert) and (Robert Tisnado). Thank

46 you. I'd like to thank the families and friends of the victims for both your  
47 patience and your attendance. At this time please allow me to go over this  
48 evening's agenda. First we will hear from the DuPont Investigation Team.  
49 Following the team's presentation the Board will be given an opportunity to  
50 ask the team questions. Thereafter we will have a public comment period. And  
51 then a vote on approving the draft recommendations. Before we begin I'd like  
52 to point out some safety information. Please take a moment to note the  
53 locations of the exits from this meeting room. Uh, three in the back and  
54 several along the walls. I also ask that you please mute cell phones so that  
55 these proceedings are not disturbed. The November 15th, 2014 accident at  
56 DuPont's LaPorte facility killed four workers when highly toxic methyl  
57 mercaptan was released. A CSB team has spent the last ten months, seven of  
58 them on site in LaPorte, conducting their investigation. They've uncovered  
59 several weaknesses or failures in DuPont safety planning and procedures.  
60 DuPont is one of the world's oldest and largest chemical manufacturers and  
61 has long been considered a safety leader. But this is the third CSB  
62 investigation in to a fatal accident at DuPont in the past five years. One  
63 worker was killed in 2010 when a hose carrying Phosgene gas burst at a Belle,  
64 West Virginia plant. Later that year a welder perished in an explosion at a  
65 Buffalo, New York facility. At the LaPorte plant DuPont makes insecticides,  
66 herbicides, and other products in a - in separate units. Methyl mercaptan is a  
67 raw material of lannate, which is a top selling broad spectrum insecticide.  
68 Production of insecticide has not yet resumed at the LaPorte facility. After  
69 the 1984 release of methyl isocyanate at Union Carbide's insecticide plant that  
70 killed thousands in Bhopal, India, DuPont LaPorte made proactive changes on  
71 how it handled a different chemical also used to make lamate - methyl  
72 isocyanate, or MIC. The facility moved production of MIC to an open  
73 building and installed equipment to destroy toxic chemical leaks. DuPont  
74 didn't broadly adopt those measures for methyl mercaptan and chlorine,  
75 however, even though they are also toxic chemicals in the building used to  
76 make the insecticide. Tonight we are going to hear an update and interim  
77 recommendations from the investigation team. DuPont has agreed to address  
78 these proposed recommendations as part of its plan to safely restart insecticide  
79 production. We believe the recommendations described by the company  
80 should do to protect the workers and the public at the LaPorte - LaPorte  
81 facility. That being said I'd like to stress that the investigation is ongoing.  
82 Although these interim recommendations will improve safety at DuPont  
83 LaPorte, there are several additional significant process safety issues that the  
84 Team wishes to address before the Board issues a final report. Farmers and the  
85 global economy rely on the advanced insecticides and herbicides made by  
86 DuPont at LaPorte. But these products must be made with the utmost regard  
87 for the safety of workers and the general public. DuPont has long been  
88 regarded as an industry safety leader. With their string of recent fatal  
89 accidents tells us is that even the best can slip in to complacency. Process  
90 safety deficiencies cost four families their loved ones and eroded public

91 confidence in DuPont. My fellow Board Members and I are determined to  
92 make sure this does not happen again. And we will all look to the day when  
93 DuPont has taken actions to restore its once-envied reputation for safety. If  
94 anyone in the audience wishes to comment publicly after the investigator's  
95 presentation please sign up on the yellow sheet in the check-in area, uh, to the  
96 left of the entrance. And I will call your name at the appropriate time. I will  
97 first call those who have signed up and then open the floor to anyone who  
98 wishes to speak. But please note that we will have to limit public comments to  
99 three minutes each just given the time and the need to get to the vote. I will  
100 now recognize my fellow Board Members for any opening remarks or  
101 introductions.  
102

103 Q1: Thank you. Good evening. I'm Manny Ehrlich. I empathize with how difficult  
104 this must be for you tonight and hope that you'll accept our sympathies and  
105 condolences and mine personally. Thank you for being here.  
106

107 Q2: Good evening. Kristen Kulinowski, new member of the Board. I'm pleased to  
108 be back in Houston where I once lived, uh, lived for 13 years. Although sad  
109 that it has to be for such a tragic occasion. I, too, extend my sympathies to the  
110 families, friends, and look forward to, um, deliberating on the findings of our  
111 investigation team.  
112

113 Q3: I'm Rick Engler. My sympathies also to the families this tragedy. Also wanna  
114 thank the workers for their cooperation. The national union that represents  
115 them. The International Chemical Workers Union Local 900C. And to their  
116 active engagement in the ongoing investigation. And finally I would like to  
117 thank the ANT Corporation for their cooperation with our investigation. Their  
118 continued commitment to not reopen the facility until critical health and safety  
119 matters are addressed while at the same time continuing to employ  
120 (unintelligible)..  
121

122 Q: Thank you, Board Members. At this time I would like to introduce the  
123 investigation team. Mr. Don Holmstrom is the Director of CSB's western  
124 regional office located in Denver, Colorado. Mr. Holmstrom joined the CSB  
125 in 1999 and has led and supervised a number of CSB investigations including  
126 the 2005 BP Texas City investigation, uh, which was an explosion and fire.  
127 Prior to coming to the CSB he worked for 18 years in the oil refining industry.  
128 And he has extensive experience in oil refinery operations, process safety  
129 management, occupational health and safety, and incident investigation. You  
130 can raise your hand, Don. Mr. Dan Tillema is the lead investigator and has 20  
131 years of experience in the petrochemical industry in process, research and  
132 development, and operations engineering prior to joining the CSB. While in  
133 industry he developed a strong process safety background and has extensive  
134 experience with plant commissioning and start up, process hazard analysis,  
135 incident investigation, process simulation, and relief system design. And has

136 been in Houston for ten months working on this investigation. Mr. Steve  
137 Cutechen joined the CSB in 2011. He has over 33 years of experience in the  
138 chemical industry in process safety and process control engineering. Over the  
139 last ten years he has specialized in incident investigation, risk analysis, and  
140 safety instrumented systems. In addition to technical roles he held various  
141 management positions ranging from technical supervision to worldwide  
142 technology management. Ms Tamara Qureshi, or (Tammy), joined the CSB in  
143 2014. She has a background in both chemical engineering and law. Prior to  
144 law school she worked for an environmental engineering consulting firm. In  
145 that position Ms. Qureshi worked on all aspects of environmental cleanup  
146 including design and site safety. Prior to joining the CSB she also was a  
147 district attorney. Mr. Holmstrom, please begin your presentation.  
148

149 Q4: Good evening. Thank you for attending tonight's presentation on the DuPont  
150 LaPorte investigation. My name is Don Holmstrom. And I'm the director of  
151 the Chemical Safety Board's western regional office and the supervisor of the  
152 investigation. Tonight three investigators will be presenting their findings  
153 associated with the interim recommendations from the DuPont LaPorte  
154 investigation. The speakers are team lead Dan Tillema. Attorney Investigator  
155 Tamara Qureshi. And Investigator Steve Cutechen. Uh, I wanna personally  
156 thank Dan, Steve, and Tamara for their excellent work. Their diligence and  
157 their sacrifice for being away from their family in many cases for weeks on  
158 end. Thank you very much. I will now turn over the presentation to Dan  
159 Tillema. Dan?  
160

161 Q5: Thank you, Don. My name is Dan Tillema. And I am the lead investigator for  
162 the DuPont LaPorte investigation. We will begin our presentation this evening  
163 by showing an animation of the November 15th DuPont incident. We will  
164 then - we will then present our investigation activities and the events that  
165 brought us here today. After that we will discuss our key findings and our  
166 proposed pre-startup recommendations. Then we will describe our potential  
167 investigation pathways. Our presentation will be followed by Board Member  
168 questions and public comment. At the end the Board will have the opportunity  
169 to vote on adopting the interim proposed recommendations. I will now show  
170 an animation depicting the November 15th DuPont incident. November 15th,  
171 2014. The DuPont facility in LaPorte, Texas. Four workers were killed and  
172 three were injured during a large release of highly-toxic methyl mercaptan  
173 within the plant's insecticide processing unit. The sequence of events that led  
174 to the incident at DuPont began on Monday, November 10th when the plant's  
175 lannate unit was shut down due to a problem with the reactor. Within that unit  
176 methyl mercaptan reacts with other chemicals to create the insecticide lannate.  
177 By noon on Wednesday, November 12th, operators attempted to restart the  
178 unit. However, the startup was unsuccessful because piping within the  
179 reaction system was blocked. This blockage was common following a  
180 shutdown and was caused by a slurry that formed in the pipes from a reaction

181 between methyl mercaptan and other chemicals. To clear the slurry operators  
182 flushed hot water through the blocked piping. By noon on Thursday,  
183 November 13th operators determined that the initial blockage was cleared.  
184 But during the operation to remove the blockage a valve was inadvertently left  
185 open that should have prevented hot water from flowing in to other piping  
186 known as the methyl mercaptan feed line. The feed line connected the reactor  
187 system to a methyl mercaptan storage tank. Operators later discovered that  
188 approximately 2000 pounds of water had escaped through the open valve in to  
189 the feed line and back in to the tank. And the water, mixed with methyl  
190 mercaptan in the feed line, creating a new blockage that would cause more  
191 problems. Since temperatures in the Houston area had been consistently cold  
192 that week the water and methyl mercaptan mixture formed a solid material  
193 called a hydrate which blocked the piping. By Friday November 14th, DuPont  
194 personnel were aware of the hydrate. And a group of operations management  
195 and technical personnel developed a strategy to address the problem. They  
196 decided to run hot water directly on the blocked piping by placing hoses under  
197 the pipe's insulation. Heating the methyl mercaptan feed line to above 52  
198 degrees Fahrenheit. Enough to transform the solid hydrate back to liquid  
199 methyl mercaptan and water. Along the methyl mercaptan feed line there were  
200 three locations where it was connected by valves to a vent header, or piping  
201 intended to remove excess or unwanted vapor from the process. DuPont  
202 personnel used pressure gauges at those three valves to determine where the  
203 blockage was and what progress they were making to clear it. They also knew  
204 that when heated methyl mercaptan can expand and would need a safe place  
205 to vent to avoid overpressure of the feed line. Because the unit was shut down  
206 an additional valve between the feed line and the reactor system was closed.  
207 Preventing methyl mercaptan from entering the reactors while they were not  
208 running. As a result in this configuration the only place for liquid methyl  
209 mercaptan to potentially flow would be in to the vent header where it was  
210 never meant to be. However, DuPont personnel did not consider this hazard  
211 when forming their strategy. First, operators cleared the blockage from a  
212 section of piping leading from the methyl mercaptan storage tank to a pump  
213 that forces methyl mercaptan in to the reactor system. Then operators began  
214 working to clear a section between the pump and the closest valve. They  
215 cracked open the valve and began to heat the piping to get rid of the hydrate.  
216 This caused some methyl mercaptan liquid to vaporize and flow through the  
217 valve in to the vent header. When this occurred pressure increased on the  
218 nearby gauge. Operators continued this process until the pressure at the first  
219 valve stopped increasing. At which point they determined that the blockage in  
220 that section of piping was cleared. Hoses were then moved to the next section  
221 of the feed line. But as it was nearing the end of the Friday day shift the hoses  
222 were not turned on at that time. At around 6:00 pm the night shift came in to  
223 work. The day shift supervisor verbally briefed the night supervisor about the  
224 strategy developed earlier in the day. The operators turned on the hot water  
225 hoses and continued efforts to clear the blockage. By this time the second

226 valve was fully open. By approximately 1:30 am the operators believe they  
227 had succeeded in clearing the piping and attempted to start up the unit. With  
228 the methyl mercaptan pump on they opened the valve between the feed line  
229 and the reactor system. However, they found methyl mercaptan was still not  
230 flowing to the reactors. The blockage remained. And they once again closed  
231 that valve. After the failed startup attempt the operations crew took a break  
232 and went to the control room. But the methyl mercaptan pump was left  
233 running. The hot water hoses were still heating the piping. And the second  
234 valve to the vent header remained open. Unknown to the operators at  
235 approximately 2:45 am the level in the methyl mercaptan storage tank began  
236 to drop. The CSB concluded that at that time the hot water removed the  
237 remaining hydrate and liquid methyl mercaptan began to flow through the  
238 feed line. The methyl mercaptan fed to the system by the pump followed the  
239 path of least resistance through the open second valve in to the vent header.  
240 The vent system quickly filled with liquid methyl mercaptan where DuPont  
241 never expected it to be. The vent system connects the methyl mercaptan  
242 storage tank with process equipment inside the lannate manufacturing  
243 building. As liquid flowed in to the vent header pressure began to build within  
244 that system. However high pressure events within the vent system were not  
245 unusual due to flawed equipment design that allowed liquid to accumulate at  
246 low points in the system. These events occurred so frequently that DuPont  
247 instructed operators to drain liquid from the vent system daily. After the  
248 control room operator separately told two coworkers about the pressure  
249 problem, they each went to the third floor of the lannate building. The  
250 required response was to drain the vent system of liquid. Two valves were  
251 opened. And the unanticipated liquid methyl mercaptan drained in to the  
252 building where it readily vaporized filling the room with a highly toxic gas.  
253 Although one of the operators was able to make a distress call, both workers  
254 died unable to escape the building. Four additional operators responded to the  
255 distress call and entered the manufacturing building. Two of them were  
256 brothers. They died together on the third floor of the lannate building. The two  
257 other responding operators survived. In total four workers were killed during  
258 the release. The release continued for another hour-and-a-half before  
259 emergency responders with proper protective gear were able to enter the  
260 building and close the valves. DuPont estimated that approximately 24,000  
261 pounds of toxic methyl mercaptan was released. Since 2010 the CSB has  
262 deployed to three fatality incidents at three separate DuPont facilities. The  
263 first was at Belle, West Virginia in January 2010 which was a toxic chemical  
264 release. A total of three releases of highly hazardous chemicals occurred over  
265 a two-day period. One fatality occurred as a result of exposure to Phosgene.  
266 The second DuPont was to the (Yorkies) Chemical Site in Buffalo, New York.  
267 This incident occurred less than eight months after the first. One fatality and  
268 an injury occurred as a result of a hot work incident. Today we are presenting  
269 interim recommendations for a third DuPont deployment. Our ongoing  
270 investigation at the LaPorte site. Last November a release of 24,000 pounds of

271 methyl mercaptan resulted in four fatalities, three personnel injuries, and three  
272 other personnel chemical exposures. While we have been on site investigating  
273 this incident there have been other smaller releases of highly toxic chemicals  
274 at LaPorte. Including chlorine and hydrogen fluoride. The decision by the  
275 CSB to deploy to LaPorte was based on our incident evaluation protocol. With  
276 important aspects being the seriousness of the incident itself, with four  
277 fatalities plus other injuries, and the fact that this was the third fatality incident  
278 for DuPont, this is the first time we've investigated one company for three  
279 separate fatalities each at a separate facility. The investigation in to the 2015  
280 explosion of the isomerization unit and what was then the BP Texas City  
281 refinery was in many ways a milestone for the Chemical Safety Board. A  
282 point of emphasis was the distinction between personal safety, often described  
283 as slips, trips and falls from process safety which addresses the control and  
284 prevention of fires, explosions, and accidental uncontrolled releases of  
285 hazardous substances. Process safety can be further simplified as the  
286 management systems that ensure that hazardous chemicals stay inside the  
287 pipes and equipment. DuPont has a good personal safety record. But the  
288 incidents we have investigated raise concerns about their process safety  
289 performance. The CSB deployed to LaPorte the day after the incident. As we  
290 often do we deployed a large response team consisting of almost half our  
291 investigative staff. Other agencies also deployed and we coordinated our  
292 activities. I would like to note that our investigation team has great  
293 cooperation from other groups and agencies throughout the duration of this  
294 investigation including DuPont and their employees. The International  
295 Chemical Workers Union Counsel of the United Food and Commercial  
296 Workers and Local 900C. KBR, a resident contractor and their employees.  
297 And Federal OSHA, especially (McKeeba Hagar), Richard Nickerson, and  
298 Althea Powell. We worked especially closely with these OSHA investigators  
299 sharing our thoughts and findings as much as practicable. Again, as we  
300 typically do, the initial deployment team was eventually paired down to a  
301 smaller investigation team. As most deployment investigators returned to their  
302 previous investigation assignments. We now have three investigators  
303 assigned. Since the beginning we have held regular meetings with DuPont  
304 LaPorte management and with local union leadership. CSB investigations go  
305 way beyond the immediate causal factors of an incident. Delving in to  
306 preconditions, management, organizational, industry and regulatory causes.  
307 This requires a lot of information. And you can see this reflected in the  
308 numbers or information we have reviewed. And while this incident was not  
309 directly caused by equipment failure, there have still been tests of various  
310 plant equipment that have been carried out in order for us to fully understand  
311 the incident sequence of events. We mention the regular meetings with  
312 DuPont. One of the things we do when we are on site is talk with the company  
313 about findings and potential recommendations as we identify corrective  
314 actions that can be taken. CSB investigators do not want to wait 'til the end of  
315 our investigation to urge a company to implement needed corrective actions.



316 During our regular meetings DuPont was cooperative and receptive to various  
317 opportunities for improvement. Many corrective actions that we have  
318 communicated during the course of the investigation have been accepted and  
319 incorporated in to DuPont action plans. During the course of our investigation  
320 CSB investigators were frequently told about pre-startup plans and about  
321 potential restart dates. Ultimately we learned from a Dup- DuPont manager at  
322 LaPorte of a planned restart in August. We were told that previously  
323 communicated corrective actions that we considered potentially critical  
324 prereq- prerequisites to a restart of the unit would not be implemented prior to  
325 the restart date. As a result we interrupted the investigation to formally  
326 prepare re-startup recommendations for Board consideration. I will now turn  
327 the investigation - presentation over to Attorney Investigator Tamara Qureshi.  
328

329 Q6: Thank you, Dan. My name is Tamara Qureshi. And as Mr. Tillema has  
330 indicated I'm an attorney investigator. Today we are presenting these pre-  
331 startup recommendations for the Board's consideration. For each  
332 recommendation we will discuss the findings they are based on. Included are  
333 recommendations in the following six areas. Inherently safer design of  
334 manufacturing processes and facilities. Worker safety in the manufacturing  
335 building. Public and worker safety from the emergency relief systems. Robust  
336 process hazard analysis. Active workforce participation. And, finally, public  
337 transparency and accountability. First I will discuss the findings that support  
338 our recommendations for using inherently safer design and evaluating  
339 DuPont's manufacturing processes and facilities. The DuPont LaPorte plant  
340 was once a leader in applying inherently safer design. It is well known for  
341 proactive changes made to the facility after the devastating December 3rd,  
342 1984 accident in Bhopal, India. Consider the worst industrial accident in  
343 history thousands of people were killed during a release of methyl isocyanate,  
344 also known as MIC, at a Union Carbide insecticide plant. That accident  
345 triggered global changes throughout the chemical industry. One of the  
346 changes was to use inherently safer design. By inherently safer design we  
347 mean that it eliminates or reduces hazards to avoid or reduce the consequences  
348 of incidents. The DuPont LaPorte site was one such facility that had changed  
349 its practices. The DuPont LaPorte insecticide business unit also uses methyl  
350 isocyanate. After Bhopal DuPont made modifications that implied inherently  
351 safer design principles for MIC. At the bottom of the slide is an important  
352 excerpt from DuPont's actual design document for the MIC unit. And it  
353 clearly shows how they applied inherently safer design principles by including  
354 an open building structure with equipment to direct potential leaks of toxic  
355 chemicals to an incinerator. As you can see here in this photograph of the  
356 MIC unit, DuPont implied inherently safer design principles through the use  
357 of an open building structure. And systems to destroy leaks of highly toxic  
358 chemicals. An open building structure and direction of toxic leaks reduces the  
359 hazards and consequences of a toxic leak because it minimizes the potential  
360 toxic chemical exposure to workers. DuPont's capability to apply inherently

361 safer design principles in this situation has been previously acknowledged by  
362 the Chemical Safety Board. However, DuPont has not applied these same  
363 principles with other chemicals that they classify as highly toxic and that are  
364 used in the insecticide business unit. Two chemicals that they classify as  
365 highly toxic are chlorine and methyl mercaptan. Unlike the MIC used in the  
366 same business unit, DuPont did not effectively apply similar inherently safer  
367 design principles to these other insecticide processes and facilities. For  
368 example, highly toxic chlorine and methyl mercaptan are located inside an  
369 enclosed manufacturing building and not in an open building structure. Note  
370 the differences between the photo of the MIC unit with the open building  
371 structure in the previous slide to the photo here of the (enclosed) - enclosed  
372 insecticide business unit manufacturing building. DuPont's non-application of  
373 inherently safer design extends farther than the manufacturing building.  
374 Another example is pressure relief systems within that insecticide business  
375 unit. Displayed here are photographs of relief systems on the methyl  
376 mercaptan storage tank. And the methyl mercaptan bead pump discharge.  
377 Both of these relief systems expose workers and the public to potential toxic  
378 gas releases. These hazards will be discussed further in a separate section  
379 focused on pressure relief systems. The CSB is making a recommendation for  
380 DuPont to conduct an inherently safer design review prior to resuming  
381 insecticide manufacturing to evaluate the hazards created by the  
382 manufacturing building and the discharge of pressure relief system with toxic  
383 chemical scenarios. For an example inherently safer design review for the  
384 building may answer questions such as is an enclosed building necessary for  
385 this process? Can the stairways be opened up to eliminate trapping of toxic  
386 vapors? For the process do you need an 18,000 gallon methyl mercaptan tank?  
387 For the relief valves, do they need to be routed to the atmosphere? Could they  
388 be routed to a destruction device to better protect the workers and the public?  
389 We are requiring that the results of the inherently safer design review be  
390 implemented to the greatest extent feasible. The specific recommendation  
391 language can be found in the recommendation documents. The next finding  
392 concerns a recommendation that addresses worker safety in the manufacturing  
393 building. For this recommendation we'll look at several different areas of  
394 focus including the manufacturing building structure and other elements of the  
395 manufacturing building such as the stairways, the ventilation system, and the  
396 air monitoring system. First we will discuss the hazards associated with the  
397 building itself. There are different reasons for why a company might put a  
398 process inside a building. However, when we investigated the manufacturing  
399 building structure we found that there were no documents that explained its  
400 design function. The building serves no apparent essential manufacturing  
401 purpose. Companies in the industry at times choose to enclose highly toxic  
402 chemical manufacturing equipment inside especially designed containment  
403 buildings. The general idea with the containment building is that if a  
404 significant leak of a toxic chemical would occur the leak would be contained  
405 in the building. And the toxic vapor would be routed to a destruction device

406 such as an incinerator or scrubber. DuPont has stated that the manufacturing  
407 building is not a containment building. But given how it encloses highly toxic  
408 chemical manufacturing equipment it can be - it can be compared to one  
409 from a worker and community hazards point of view. Industry has  
410 recognized that when containment buildings are used there is a benefit to the  
411 community because it is less likely that the toxic chemical will travel off site  
412 and impact the community. However, industry has also recognized that  
413 enclosing the leak within the building creates an increased hazard to workers.  
414 The insecticide business unit manufacturing building introduces increased  
415 worker hazards similar to that of a formal containment building without the  
416 benefit. For example, if there is a toxic leak it is trapped and concentrated  
417 inside. But these toxic vapors are not routed to a destruction device. Unlike a  
418 containment building these hazards are not balanced by a benefit of providing  
419 risk reduction to the public. Instead if the toxic vapors are collected they are  
420 (jar)- discharged from the roof five floors up to the outside atmosphere and, in  
421 turn, potentially to the public. Next we will talk about the hazards associated  
422 with the stairways in the manufacturing building. The manufacturing building  
423 stairways are the primary means to access equipment or to enter or exit the  
424 building. The stairways were not a safe haven for workers from toxic gases in  
425 the manufacturing building. Although workers routinely access the stairways  
426 they are not connected to the building ventilation system. And have not been  
427 evaluated for toxic gas hazards or oxygen-deficient environments. DuPont  
428 designed these stairways for fire escape. There are internal fire doors  
429 separating the stairways from the process equipment area as you could see  
430 from the prior slide. These doors do not provide barriers to hazardous gases  
431 entering the stairways from the process areas. The next area of focus is the  
432 manufacturing building's ventilation system. As you can see in this simplified  
433 drawing of the ventilation system the building is divided in to two halves. On  
434 the left is the wet end where liquids are processed. And on the right is the dry  
435 end where powders are processed. On each side fresh air enters through the  
436 louvers. Are swept across the equipment and up in to the exhaust air duct. All  
437 of these exhaust air ducts from each of the floors and from each side of the  
438 building are collected in to common headers. One for the wet end and one end  
439 for the dry end. The air is pulled through the ventilation system by fans  
440 mounted on the roof like the one shown here which is for the dry end fan.  
441 There are many problems with the ventilation system that make it ineffective.  
442 The previous slide showed how the ventilation theoretically creates an airflow  
443 pattern. In actuality there are short-circuited air patterns that prevent the  
444 system from working effectively. The wet end and the dry end each has its  
445 own ventilation fan. The ventilation system was designed with the idea that  
446 each half of the building would operate independently. Additionally, the two  
447 halves would be divided by closed fire doors. When we discussed the  
448 stairways you may recall there was a sign on the door, a fire door, saying to  
449 keep it closed. Similar doors separate the wet end and dry end as you can see  
450 here. Although these doors also have signs to keep them closed these doors

451 are often popped open. Moreover, doors to the outside would also be proper -  
452 popped open further interrupting airflow patterns. There are also holes in the  
453 outside walls of the building that are not sealed. The open fire doors and the  
454 holes in the wall allow air in to the building and adversely affect the airflow  
455 patterns within the building. We have a short video clip which illustrates the  
456 effect of these short-circuited airflow patterns. In the middle top of the picture  
457 there is a light bulb and around which is a cloud of steam. When you watch  
458 the video as the camera zooms in you will see that the steam is stagnant and  
459 not being swept towards an exhaust duct. As you will see in this video there's  
460 not good ventilation even when the fan is in operation. The ventilation system  
461 had two design objectives, preventing flammable and toxic conditions inside  
462 the building. The ventilation system like other parts of the building was  
463 designed to deal with chemicals that are flammable. One of the values used is  
464 a lower explosive limit. The limit they would use for methyl mercaptan would  
465 be 65 times greater than the amount that would be immediately dangerous to  
466 life or health. However, the ventilation system does not meet its toxicity  
467 design objectives to control contaminants to acceptable workplace exposure  
468 levels. There are no documents describing how DuPont planned to meet this  
469 objective. And it is important to emphasize that this design objective is  
470 communicated to workers. It is written in the operating manual and the safety  
471 and occupational health section of the unit technical standards. Workers  
472 reading this objective would reasonably assume that the ventilation system  
473 would protect them from a toxic release. However, preliminary calculations  
474 indicate that even had the fans been running the design objective of acceptable  
475 workplace exposure levels could have not been met during this incident. There  
476 would have been insufficient ventilation to avoid a lethal atmosphere inside  
477 the room where the release occurred. The performance capability of that  
478 ventilation system in the wet end area is unknown because it has not been  
479 tested. A 2009 audit of the DuPont LaPorte's process safety management  
480 system found that the ventilation was not being tested as it was supposed to.  
481 The audit team created an action item to fill this gap. However, all that was  
482 required to close the audit action item was to create a periodic work order for  
483 dilution airflow testing. Two years passed before it was identified that testing  
484 had not occurred. Because DuPont technical personnel did not understand the  
485 testing requirements the ventilation system was not fully evaluated. Despite  
486 the 2009 audit finding the flow rates and effective distribution of dilution error  
487 for the wet end fan was never tested. Moreover, only dilution airflow  
488 measurements for the dry end fan were taken. But there was no analysis, just  
489 measurements. Finally, maintenance of the building ventilation fan has been  
490 ineffective. The ventilation fans are classified as process safety critical, or  
491 PSM critical, equipment. Meaning that their failure could result in a high  
492 consequence event. Neither ventilation fan was operational at the time of the  
493 November 15th, 2014 incident. The wet end fan and dry end fan both had poor  
494 reliability. The dry end fan had been down for five months since two thousand  
495 - June 2014 due to an electrical problem. The wet end fan was shut down on

496 October 20th, 2014 because it was making a noise significant enough that  
497 DuPont operators turned it off and wrote an urgent work order to have it  
498 repaired. Despite the urgent work order this fan required to ventilate the room  
499 where the release occurred is not fixed. The failure of these safety critical fans  
500 did not result in additional safety precautions such as special operating  
501 procedures, special emergency response procedures, worker access  
502 restrictions, or additional personal protective equipment requirement. The  
503 final focus is the manufacturing building air monitoring system. One of the  
504 chemicals that the manufacturing buildings, gas detector system monitors, is  
505 methyl mercaptan. At the time of the incident there were three methyl  
506 mercaptan detectors located in the building, two on the first floor, one on the  
507 fourth floor. Zero were located on the third floor where the release took place.  
508 The design of the gas detectors did not effectively protect workers. They do  
509 not provide an effective warning. For example, there are no gas detector alert  
510 systems in the building. The only alarm is in the control room. Workers in the  
511 building have no independent way to know if a building gas detector has gone  
512 in to alarm. Furthermore, there's no warning to prevent workers from entering  
513 the building if there is a hazardous atmosphere. A worker could enter the  
514 building without knowing that a gas leak has occurred and then become  
515 incapacitated before being able to react. DuPont has designed a building with  
516 atmospheric monitoring to protect workers. They have done so with an  
517 analyzer how it's shown here. Which is located in the same business unit  
518 where the incident took place. As you can see there is a green light at the door.  
519 If it is not safe to enter a local alarm sounds at the door. And the green light  
520 outside turns off. Unlike the manufacturing building this DuPont analyzer  
521 house provides warning to workers to prevent entry in to an unsafe  
522 atmosphere. DuPont's response to a methyl mercaptan gas detector alarm is  
523 not sufficient to warn workers or the public. Hours before the November 15th,  
524 2014 incident multiple highly toxic chemical gas detectors alarmed.  
525 Furthermore, methyl c- mercaptan releases on November 13th and 14th were  
526 picked up by methyl mercaptan detectors. But they were never reported as  
527 releases nor investigated as serious process safety incidents. DuPont's methyl  
528 mercaptan detectors are intended to provide early warning of significant leaks  
529 with potential off site impacts and do not protect workers from exceeding  
530 short-term exposure limits. The alarm point of the methyl mercaptan detectors  
531 is 25 parts per million. The alarm is set at the emergency response planning  
532 guide 2, or ERPG2, which is where irreversible health effects begin after a  
533 one-hour exposure. This alarm point of the methyl mercaptan detectors is  
534 above the permissible exposure limit for workers. The OSHA permissible  
535 exposure ceiling limit is 10 parts per million. This means that workers should  
536 not be exposed to concentrations greater than 10 parts per million for any  
537 duration of time even instantaneously. It is important to note that OSHA has  
538 recognized that this exposure limit is outdated. OSHA instead recommends  
539 companies use (nyash) or (kaloshek) exposure limits of 0.5 parts per million.  
540 To ensure worker safety inside the manufacturing building the CSB is making

541 pre-startup recommendations to DuPont to conduct an engineering evaluation  
542 of the manufacturing building and ventilation system. An implement  
543 corrective actions to ensure worker safety to the greatest extent feasible. In  
544 addition, the CSB recommends that DuPont document the design basis for the  
545 manufacturing building and ventilation system. Identify controls for highly  
546 toxic asphyxiation and flammability hazards. And, again, as we have  
547 emphasized, the specific recommendation language can be found in the  
548 recommendations document. I will now turn the presentation over to  
549 Investigator Steve Cutechen.  
550

551 Q7: Thank you, Tamara. My name is Steve Cutechen and I'm an investigator with  
552 the Chemical Safety Board assigned to this DuPont incident. Next we'll  
553 discuss worker safety from emergency relief valve systems. DuPont has been  
554 in the process of implementing a five-year program at LaPorte to validate that  
555 pressure relief systems comply with existing DuPont standards, process safety  
556 regulations, and industry standards and codes. Industry standards and codes  
557 and regulations for relief systems are well established. The American  
558 Petroleum Institute Standard 521 is included in this as is the American Society  
559 of Mechanical Engineers, boiler and pressure vessel code. On the regulation  
560 side OSHA's process safety management regulation is enforced with respect  
561 to these relief systems. DuPont's five-year plan to evaluate relief systems is  
562 due to be completed this year, 2015. However, the work is only 35%  
563 complete. And the CSB has identified that the scope of DuPont's program is  
564 not sufficient. It does not effectively evaluate relief scenarios. It also does not  
565 effectively evaluate whether relief system discharges are routed to safe  
566 locations. As a result the evaluation program does not effectively ensure the  
567 safety of workers or of the public. I have four examples of relief systems in  
568 the insecticide business unit that the CSB has identified as not meeting  
569 standards. The first is on the methyl mercaptan storage tank. This is the tank  
570 that was involved in the November 15th incident. In 2002 DuPont evaluated  
571 the potential to exceed off-site concentrations from a release of methyl  
572 mercaptan through the relief valves on the top of this 18,000 gallon methyl  
573 mercaptan storage tank due to a fire. The relief valves are located up here --  
574 woops, I'm sorry -- up here on top inside this yellow circle. And these vertical  
575 sections here are the discharges to the atmosphere. DuPont's evaluation of  
576 these relief valves found that they could release as much as 10,000 pounds per  
577 hour of methyl mercaptan if there was a fire under this tank. And that if they  
578 did do that the relief rate was high enough that it would exceed the ERPG3  
579 values for methyl mercaptan. If you recall from Tamara's presentation,  
580 ERPG2 was the point where irreversible health effects began after one hour.  
581 ERPG3 is where the concentration is high enough that life threatening effects  
582 are expected after one hour. And while the ERPG2 limit is 25 parts per  
583 million, ERPG3 for methyl mercaptan is 100 parts per million. To mitigate  
584 this risk to the public DuPont invested over \$17,000 to insulate this tank with  
585 fireproof insulation. Proper fireproof insulation will slow the rate at which

586 heat enters a tank due to a fire. And as a result the relief rate will be smaller.  
587 DuPont's analysis found that the edition of fireproof insulation could reduce  
588 the relief rate from these two relief valves from 10,000 pounds per hour to  
589 4500 pounds per hour which would avoid ERPG3 concentrations in off site as  
590 an exposure to the public. However, as you can see from this photograph, the  
591 tank is not insulated. The insulation intended to protect the community from  
592 ERPG3 concentrations of methyl mercaptan was removed. So since that time  
593 workers and the public have been exposed to unacceptable risks. The CSB has  
594 been unable to determine when the insulation was removed. DuPont lacks  
595 documentation, for example, management of change. And the change is not  
596 documented in the process hazards analysis associated with this tank. Also,  
597 current DuPont personnel were unaware of the tank ever being insulated for  
598 the purpose of limiting toxic gas exposure to the public. The second example  
599 of an unsafe relief system involves two relief valves located on a nitrogen  
600 supply system in the IBU. These two relief valves could open if controls that  
601 regulate the nitrogen system pressure were to malfunction. In the photograph  
602 you can see the discharges of the relief valves are directed to the underside of  
603 a rack containing piping and other process equipment. So that's - that's these  
604 two arrows. Here's the relief valve, the little gray relief valve. And you can  
605 see the arrow from this other one as well directed up at the underside of this  
606 piping. Also if you look in the back you can see this ramp and doorway. This  
607 is an access point in to the building for workers. If those relief valves open  
608 nitrogen will deflect off of that piping and be directed toward the ramp and  
609 that opening. This is an asphyxiation hazard. DuPont standards specifically  
610 prohibit both of these scenarios. Relief systems are not to be designed to  
611 impinge on piping. And relief systems are not to be designed so that they're  
612 directed toward platforms or other areas used by workers. The third example  
613 involves a relief system that activated while we were on sight doing our  
614 investigation in December, on December 16th of last year. Highly toxic  
615 chlorine was released from a relief valve on a caustic scrubber located within  
616 this - the - the relief valve was located within this yellow oval that you see in  
617 the photograph. Now, it's hard to see the actual valve because there's so much  
618 congestion with the piping. Where this is located is on the outside of the  
619 manufacturing building. And there are portions of the building on three sides.  
620 The detector - the chlorine detector that actually detected the - the relief valve  
621 going off is located on the other side of the structure that you see in this  
622 photograph. Recall from the previous example that DuPont standards  
623 specifically prohibit relief systems that are directed toward platforms or areas  
624 used by workers. For this relief system DuPont actually evaluated this. And  
625 they concluded that the location was safe because the platform associated with  
626 the valve was located 10' below the valve. But if you look at the photograph  
627 there are platforms also located above that valve. Finally, like the storage tank  
628 example, this example includes a relief system that was on the equipment that  
629 was associated with the November incident. The relief valve shown here is on  
630 the discharge piping of the lannate feed pump that feeds methyl mercaptan

631 from the storage tank in to the manufacturing building. This is the feed pump  
632 that feeds the feed line that was frozen. Relief valves on this piping are  
633 designed -- in the circle that you see here -- are designed to discharge liquid  
634 methyl mercaptan to the ground adjacent to where workers were sta- would be  
635 standing if they were starting that pump. Now, there are actually two pumps.  
636 And they're virtually identical. The other pump also supplies methyl  
637 mercaptan but it's to another process called API. The API pump also used to  
638 have relief valves just like this one here on the lannate pump. But they were  
639 removed in the 1990's. No process hazards analysis or relief system analysis  
640 documents these lannate valves and answers why they're still present. And  
641 key DuPont technical personnel were unaware that these valves existed. The  
642 CSB is making recommendations to DuPont to ensure that all IBU pressure  
643 relief systems are routed to a safe location prior to resuming IBU  
644 manufacturing. And we're also recommending that DuPont commission a  
645 pressure relief device analysis consistent with standards and codes. And that  
646 implementation of the results of that analysis must specifically result in all  
647 pressure relief discharges being routed to safe locations. And as we've been  
648 saying the details of our recommendations this evening are found in our  
649 document. Next I'm going to talk about process hazards analysis. Process  
650 hazards analysis, or PHA, come in many forms. For example, if there's a new  
651 capital project that's being implemented a series of PHAs are typically  
652 performed at various stages, design, construction, and pre-commissioning.  
653 OSHA's process safety management regulation requires periodic PHAs be  
654 conducted for existing processes. A PHA is also included as part of the  
655 OSHA-mandated management of change process that discovers that - that  
656 covers any modifications that you make to a given process. I'm gonna  
657 describe two areas associated with the incident where the CSB investigation  
658 has revealed deficiencies in the PHA process at the DuPont LaPorte facility.  
659 The first example has to do with the manufacturing building ventilation  
660 system which Tamara had described earlier. The left photograph here shows  
661 the dry end and the wet end fans located on the roof of the manufacturing  
662 building on the fifth level. On the right at the bottom are the louvers that she  
663 described through which fresh air are drawn in. And the photo at the top is the  
664 duct work which routes the exhaust air to the outside collection duct and up to  
665 the fan located on the roof. The ventilation system for the manufacturing  
666 building, a process safety critical system described as designed to control  
667 contaminants to an acceptable workplace exposure level, has never been  
668 evaluated by a process hazards analysis. The DuPont PHA schedule indicates  
669 that the initial PHA for the manufacturing building ventilation system will not  
670 occur until 2017. The second example that I'm going - that I'm showing  
671 involves the valves that were described in the video of the incident. These are  
672 the valves that connected the liquid methyl mercaptan feed system to the  
673 vapor waste gas vent header at each of the two rail car spots. One of these five  
674 valves that was opened at each rail card spot to create this pathway was  
675 installed as part of a project to build a new incinerator for the insecticide



676 business unit. The design change for this new incinerator rerouted the rail car  
677 vents from an old existing incinerator and, instead, the vents were routed  
678 through the manufacturing building in to this new incinerator. The project  
679 PHA did not identify this new connection or the routing of this methyl  
680 mercaptan vent from the rail cars going through the manufacturing building as  
681 potentially causing a hazardous event. And on the evening of the incident the  
682 plan for using hot water on the outside of the methyl mercaptan piping to melt  
683 the hydrate, that plan was developed by DuPont technical and operations staff  
684 on the morning of Friday, November 14th. This plan included using this new  
685 rail car and loading spot valve to purposefully connect the liquid methyl  
686 mercaptan feed line that they were trying to thaw to the vapor waste gas event  
687 header. No written plans or instructions were developed. No PHA was used to  
688 evaluate the potential hazards of this plan. In the photograph the white valve  
689 on the far right -- so that's this valve right here -- is the valve that - the new  
690 valve with the new connection through which the liquid methyl mercaptan  
691 flowed in order to reach the third floor of the manufacturing building. This  
692 photograph was taken by DuPont three days after the incident in order to  
693 document the position of the valves as found. It's a little hard to see I think on  
694 this big screen, especially if I change the slide. But - so this is the hand wheel  
695 of this valve. And there's a stem sticking out here pretty far which is an  
696 indication on a valve like this that this valve is open. DuPont determined the  
697 valve was fully open at the time of the incident. I mentioned earlier that  
698 OSHA's process safety management regulation requires periodic PHAs be  
699 conducted for existing processes. Well, there are two types of periodic PHAs.  
700 Base line PHAs are conducted from a clean sheet of paper. They amount to a  
701 fresh look at the process safety of a particular unit. Revalidation PHAs, on the  
702 other hand, start with an existing PHA and check for required updates. DuPont  
703 had divi- has divided their insecticide business unit in to 15 different areas for  
704 conducting these OSHA-required periodic PHAs. And DuPont decided to -  
705 prior to startup to conduct two new base line PHAs for two of the areas out of  
706 these 15. Now, there are several methods for conducting a PHA that are  
707 approved and actually listed within OSHA's regulation. At the 2012 Global  
708 Congress on Process Safety, which is hosted by the American Institute of  
709 Chemical Engineers, a DuPont corporate PHA expert presented a new robust  
710 PHA method which combined advantages of several existing methods.  
711 DuPont decided to implement this new method for these two new baseline  
712 PHAs. Many new potential hazardous events were identified, and hundreds of  
713 new corrective actions have been developed using this new method. DuPont  
714 has since agreed to implement an expedited schedule for the remaining IBU  
715 PHAs applying this new methodology and prioritizing high hazard processes.  
716 So the CSB is making recommendations to DuPont to formalize this  
717 agreement. Develop and implement an expedited schedule to perform more  
718 robust PHAs consistent with the previous recommendations of systems that  
719 we've identified this evening for all of the IBU units. And prioritize that  
720 schedule based on anticipated risks to the public and workers in order to

721 ensure that the highest risk areas receive priority consideration. And, again,  
722 the specific language is found in our document. Our next topic is the  
723 importance of active workforce participation. Throughout our investigative  
724 work the CSB has identified that workers and their representatives play a very  
725 important role in major accident prevention. The Center for Chemical Process  
726 Safety is an organization of the American Institute of Chemical Engineers.  
727 And they endorse this importance of worker involvement and participation  
728 with strong language in the book Guidelines for Risk Based Process Safety.  
729 Now, I'm gonna read their quote verbatim. "Workers are potentially the most  
730 knowledgeable people with respect to day-to-day details of operating and the  
731 process and maintaining equipment and facilities. And they may be the sole  
732 source for some types of knowledge gained through their unique experiences.  
733 Workforce involvement provides management w- with a mechanism for  
734 taping in to this valuable expertise." With these benefits in mind the CSB is  
735 making recommendations to DuPont, to the International Chemical Workers  
736 Union Council of the United Food and Commercial Workers, and Local 900C  
737 to work together to develop and implement a plan for effective participation of  
738 the workforce and their representatives in the implementation of the CSB  
739 recommendations regarding the issues we've talked about this evening.  
740 Inherently safer design review. Ensuring worker safety in the manufacturing  
741 building. Ensuring a relief system design that is safe for workers and the  
742 public. And the performance of more robust process hazards analysis. In  
743 addition, the CSB recommends that DuPont provide a copy of their integrated  
744 plan for restarting the LaPorte processes to the workers and their local union  
745 representatives. And, again, the specific language is in our document. Finally,  
746 we discussed the importance of public transparency and accountability. In our  
747 Chevron Richmond refinery investigation the CSB identified that transparency  
748 between the industry and the public improves health and safety for both the  
749 facility and also for the community. So with these benefits in mind the CSB is  
750 making recommendations to DuPont to make publicly available a summary of  
751 the DuPont November 15th, 2014 incident investigation report. And a  
752 summary of the actions to be taken to implement those same four items that I  
753 just listed, inherently safer design review, ensuring worker safety in the  
754 manufacturing building, ensuring a relief system design safe for workers in  
755 the public, and the performance of a more robust process hazards analysis.  
756 And I know you're getting tired of hearing it, but the specific recommendation  
757 language is in our document. As we described at the beginning the  
758 recommendations presented today are interim recommendations that the  
759 investigation team considered potentially critical prerequisites to a restart of  
760 this unit. We interrupted our investigation to develop these recommendations  
761 for Board consideration. And with this work completed the investigation team  
762 will now shift back to putting its full attention on the investigation of the  
763 November 15th incident. Our focus will include the following potential  
764 investigative pathways. There are circumstances that existed at DuPont which  
765 may have created preconditions to the incident in the areas of safety culture,

766 normalization of deviance, and equipment design. There are also systems that  
767 we are investigating which are intended to create awareness of hazards and  
768 risk such as process hazards analyses and management of change systems.  
769 There are potential pathways centered on the organizational techniques and  
770 practices that are used for troubleshooting operational issues such as the  
771 blockage of this methyl mercaptan feed line. These include areas of  
772 leadership, communication, and the development of procedures for ad hoc or  
773 one off non-routine activities. We will also continue to investigate the  
774 emergency responses that occurred after the release. And will continue  
775 evaluating guidance for industry sources. For example, in the areas of  
776 equipment design, PHA requirements, and the safety of ad hoc procedures.  
777 And, finally, we will continue to investigate whether there are potential  
778 improvements to existing regulatory requirements which would be effective in  
779 preventing a recurrence of an incident like this. So this concludes our  
780 presentation. And we're now prepared to proceed with the agenda for this  
781 evening beginning with questions from the Board.

782  
783 Q: First thank you to the investigative team, uh, for a very detailed presentation.  
784 And before we take public comment we will take questions from the Board.  
785 The Board will, um, or any Board member that has a question will indicate so  
786 by slightly raising their hand. I will ask the first question for the investigation  
787 team. We have listened to - I have personally listened to union members, and  
788 DuPont management, um, and even received a call directly from, um, a VP  
789 and the CEO of DuPont to talk about their commitment. But, Mr. Tillema, you  
790 mentioned that they are starting work, or beginning work, on some of the  
791 recommendations. Can you provide a little bit more detail about, um, their  
792 progress and - and how many resources you could glean they've committed to  
793 it, even though they've orally committed that they're beginning to look at the  
794 draft recommendations and commence work based on what we have  
795 identified?

796  
797 Q5: So, to discuss how much DuPont has done already? Okay. Um, and when we -  
798 we started first developing these interim recommendations back in early June  
799 - June 11th, at which point in time DuPont was not willing to do the  
800 recommendations we are presenting here tonight. After we got that first draft,  
801 um, completed, that was around June 23rd, we were able to provide a copy of  
802 that to DuPont for our factual and CBI process for quality control that we  
803 have. And, uh, after DuPont received that document about a week later they  
804 had changed their position on the recommendations and had verbally or orally  
805 agreed to adopt the recommendations and get them implemented. Since then,  
806 you know, we've had several conversations with them about prac- their - their  
807 progress on those. There's - you know, it's a big scope of work. And DuPont  
808 will tell you that, you know, they do not have a restart date at this point in  
809 time. They've - they've postponed what we believed was the August startup.  
810 Um, and they've - working still on developing a more comprehensive restart

811 plan which is what we've asked them to share a summary of with the public.  
812 Share the more full details with the union workers at the site and ourselves.  
813 Um, but the - the details of that restart plan are - are still being developed.  
814 And I don't think there's a startup date even as of yet.

815  
816 Q: But would you expect the restart plan to include -- or progress reports -- to  
817 include significant progress on all of the draft interim recommendations  
818 before you would consider the facility safe to restart?  
819

820 Q5: I think so, yes. I mean, definitely like with the relief valves, we've been told  
821 there's a lot of work going on with relief valves to make sure those systems  
822 are gonna be safe before they restart. Some of the PHAs will even be  
823 completed. The new baseline PHAs with the more robust methodology, um,  
824 will be completed before restart. Um, they're committing to an expedited  
825 schedule rather than the five-year regulatory review of what we've been told  
826 thus far as it will be more like a three-year schedule for the relief valves. The  
827 inherently safer design reviews are taking place. And they've committed to  
828 looking at everything, um, I - I won't go in to the specific details of some of  
829 the things they're looking at 'cause I don't want like to commit them to things  
830 that might not wind up happening. But what we've been told is they are taking  
831 these very seriously and they are looking at the inherently safer design options  
832 very seriously.  
833

834 Q: My last question before I recognize, uh, individual Board members is, Ms.  
835 Qureshi, you mentioned that, um, the containment facility did not have any  
836 destruction device. Can you explain, uh, to us whether it is equally safe if  
837 they've had a c- a containment building with some appropriate destruction  
838 device or routing system versus a more open structure, are those equally safe?  
839 Or should they be looking at one versus the other?  
840

841 Q6: That is actually part of what, um, DuPont is actually doing. They're actually  
842 investing money in getting sources so that they can evaluate what would be an  
843 appropriate structure for that particular building. But they are gonna be the  
844 ones who have all of the analysis and the data to determine whether or not  
845 would it be safer to have walls, or what parts of the area would have walls.  
846 What type of ventilation s- system would be appropriate. Um, or to actually  
847 just take all the walls off. That is all part of what DuPont will be doing and  
848 part of their analysis.  
849

850 Q: Thank you.

851  
852 Q5: Um - um, might just add to that that, you know, looking at the containment  
853 building and open structure versus closed is really a risk tradeoff that DuPont  
854 has to look at and make a decision. Uh, there's an increased worked -  
855 increased risk to the workers with the containment building type design.

856 There's a risk reduction to the public. And it's really a corporate level  
857 decision on what their ultimate preference is gonna be.  
858

859 Q: Thank you. I saw a hand from Member Ehrlich.  
860

861 Q1: First of all, I wanna thank you for the commitment you made to this. And an  
862 excellent presentation. Thank you all very much. I'm always interested in the  
863 emergency response aspects of these things. Uh, you stated that you're going  
864 to look at all of the emergency response incidents that have occurred. But  
865 beyond that are you gonna look at all of the requirements, uh, that are set forth  
866 by OSHA and other regulatory agencies for implementing, equipping, training  
867 and exercising a, um, adequate emergency response function?  
868

869 Q5: Um, short answer will be yes. I mean, the longer answer is DuPont's actually  
870 doing a lot of that. I mean, since the incident happened, um, ultimately the  
871 emergency response itself we don't see as causal to the incident in any way.  
872 However, they saw a lot of shortcomings in their emergency response  
873 programs. And they've - they've gone back and reassessed that entire  
874 program. And a lot of that work is still pending. So it's not fully complete yet.  
875

876 Q1: Okay. And I had one more...  
877

878 Q3: I'll - I'll...  
879

880 Q1: ...ques...  
881

882 Q3: ...I'll add to - to that just briefly. I mean, one of the things that we've come to  
883 realize is one of the - the su- the supervisor who perished in this incident,  
884 Wade Baker, was - had a very, uh, important role with respect to emergency  
885 response on that - on night shift like he was on. And when he went down as  
886 part of this incident that created a - a pretty big gap in how they could  
887 respond. And how to fill that gap in a situation like that is somethin' that we  
888 need to look in to. Uh, another area is that there are multiple companies  
889 associated. All that use - this - this used to be one big DuPont facility. And  
890 now there are several companies associated with bits and pieces of this what  
891 formally was one big site. And they all work together to effectively put their  
892 emergency response teams as one. That process is still difficult, though,  
893 because you're looking at trying to coordinate that across different companies.  
894 And we'll be looking in to some of the effectiveness of how that works.  
895

896 Q1: Thank you. Well, on top of that, um, not only different companies, but  
897 different product lines and different training requirements for the responders,  
898 as well. Um, emergency response on off shifts is always a problem where you  
899 don't have a full staff. And it just requires an absolute commitment to some  
900 type of public group, or public service group, or, uh, just people that are

901 available for emergency response training 24/7. I have one more question.  
902 You commented that -- I think it was, you, Steve -- that the, um, or maybe it  
903 was (Tammy) -- the - the, uh, ventilation system PHA was supposed to have  
904 been done and has been postponed until 2017? Is that right?

905  
906 Q7: I think it's - what's happened is it hasn't been part of a PHA. In the first  
907 scheduled PHA or the ventilation system was scheduled for 2017.

908  
909 Q1: Okay. But that's gonna be expedited, I assume, right?

910  
911 Q7: We would expect so, certainly.

912  
913 Q1: Okay, thank you. Thank you, Chair.

914  
915 Q: Thank you, Member Ehrlich. Member Kulinowski?

916  
917 Q2: I'd like to ask a question about personal protective equipment and its role in  
918 this tragedy. Uh, did you find any evidence that there were safety protocols  
919 for the use of personal protective equipment, particularly respiratory,  
920 protection for these workers when they were conducting such non-routine  
921 operations as non-routine that became routine of opening this valve to relieve  
922 the pressure?

923  
924 Q5: So, I mean, DuPont has a great many policies and procedures. There are  
925 policies and procedures that if you read them they will imply to you that  
926 personal protective equipment like respiratory protection should have been  
927 worn for that job. However, at the same time the daily instructions that  
928 operators were following to go out there and drain that line, um, did not  
929 specify any additional, um, personal protective equipment or respiratory  
930 equipment. And the practice that developed over time was not to use it. Um, I  
931 don't know, do you guys have anything else you would add to that?

932  
933 Man: I think - I mean, the material that they were normally draining was something  
934 that was pretty smelly. But I don't know that they felt like that there was a  
935 particular hazard associated with it. What happened in this situation was that  
936 you - you had methyl mercaptan almost - well, essentially pure methyl  
937 mercaptan, on the other side of that valve when it was opened, and not the  
938 normal liquid that they were used to having collect in that vent header. And so  
939 it - you know, it's a situation where maybe the normal response is - or the  
940 response that's been normalized, based on what your initial instructions were,  
941 is to not use respiratory protection 'cause you just don't see a need for it. But  
942 then there's alternate scenarios that maybe everybody hasn't thought about  
943 hasn't come up in a PHA, uh, that, as a result, can catch you by surprise.

944  
945 Q: And it is your conclusion that these - if these PHAs had been done this

946 potential for this hazard could have been identified?

947

948 Man: I believe that - that in - that this was essentially a line break on these lines  
949 when these lines were drained. And, as such, uh, DuPont should have been  
950 requiring, uh, that they be wearing full respiratory protection.

951

952 Q5: Goin' back even further with the PHA, I mean, liquid in a vapor vent header  
953 system is something DuPont has dealt with in two other applications on that  
954 same vent header? Where in other applications they have a drain line hard  
955 piped to other process equipment so it would not have to be released to the  
956 atmosphere at all. Um, and - and I think a PHA would be reasonably expected  
957 to catch something like that and to offer corrective actions.

958

959 Q: Thank you.

960

961 Woman: As a related or follow-up question to Member Kulinowski, how would the  
962 methyl mercap- uh, methyl mercaptan detectors, um, sort of work together  
963 with this? Because, clearly, they are implementing, or DuPont says they're  
964 gonna implement new alarm detectors. But even if the alarm detectors had  
965 been there and (unintelligible) set at an appropriate level, they still wouldn't  
966 have been able to enter. Is there gonna be more sp- specificity placed on the  
967 detector setting it at the right level, making sure that people know even with  
968 our equipment we shouldn't go in because the amounts or concentrations here  
969 are too deadly? Tell - tell me a little bit more about how the new alarms or  
970 detectors might also, um, prevent people from walking in even if they do have  
971 the appropriate PPE.

972

973 Q5: Yeah. So we still don't have the full details of how many detectors are gonna  
974 be installed. Clearly more are going to be installed. We saw some of them on  
975 our field review this week. New detectors out there. We saw lights on the  
976 outside of the building that appear to be some kind of a pre-warning system  
977 that there's an unsafe atmosphere in the building to prevent people from going  
978 in there. Um, but we still don't have the full details of what DuPont's plans  
979 are there. Um, that's - that's something we'll look as those - as those details  
980 are provided to us.

981

982 Q: Okay, I heard you.

983

984 Man: Yeah.

985

986 Q: Um, I'll recognize Member Ehrlich.

987

988 Q1: Um, was there any indication that they had completed a comprehensive  
989 HASCOM, uh, either under the old 1200 standard, or HASCOM 212 training,  
990 uh, in that unit?

991  
992 Q5: Um, gosh, off the top of my head I don't remember that. I know there's -  
993 there's a lot of training that DuPont employees take. I don't remember the  
994 specific HASCOM training. Um, I'm sure we've seen training records for  
995 that? I just don't remember it.  
996  
997 Q1: 'Kay. And I guess one other question I had was, are they going to use or  
998 implement a procedure where they use four gas monitors when they go in to  
999 these areas aside and apart from the fixed sensors?  
1000  
1001 Q5: I think - I think a lot of that is - is still not fully known to us. I mean, you  
1002 know, we haven't talked about it. But, you know, there's even the explosion  
1003 potential during the incident?  
1004  
1005 Q1: Right.  
1006  
1007 Q5: That's all stuff that we're still continuing to evaluate and understand how they  
1008 intend to address that in the future. 'Cause at - at one point, you know, you're  
1009 worried about the atmospheric from an inhalation toxicity. From another point  
1010 you don't want anyone goin' in there because it's, you know, an explosive  
1011 atmosphere in there and that has to be considered, as well. Again, those are  
1012 details that we'll be looking at as we go forward. But we just don't have  
1013 sufficient information.  
1014  
1015 Q1: Thank you.  
1016  
1017 Q: Member Engler, do you have any questions?  
1018  
1019 Q3: Thank you. I have a quick comment and one question. Over two months ago  
1020 the International Chemical Workers Union Council and the United  
1021 Steelworkers, which represent DuPont, workers across the nation wrote to the  
1022 CCO DuPont, Ellen Kullman, asking her to start a dialogue that had a better  
1023 protect safety, health and the environment with the two unions. But to date she  
1024 has not agreed. I encourage DuPont to reconsider its position and engage in  
1025 such a national dialogue which could only help implement the CSB's  
1026 recommendations at LaPorte, particularly if there are issues with limited  
1027 resources to conduct PHAs in a timely fashion. Uh, my question is -- and it  
1028 speaks to that larger question of safety culture -- is that I understand that a  
1029 DuPont LaPorte employee with eight years of experience was disciplined in  
1030 2013 for allegedly leaving a valve open involving chlorine. Now we find out  
1031 from our investigation that LaPorte site policies, procedures, and training were  
1032 fundamentally flawed. Is it appropriate in - in your view to penalize individual  
1033 workers in these types of situations? In my view, blaming workers creates a  
1034 climate of fear which suppresses reporting and open discussion of health,  
1035 safety and environmental concerns. I would appreciate your comments on that



1036 question.

1037

1038 Q5: Um, in - in general, um, that particular incident, if it's the one I'm - I'm  
1039 thinking or referring to, is - is something we are looking at as part of our  
1040 investigation. Our focus with that investigation is really - since we've been at  
1041 this site we've heard from the workers that DuPont incident investigations do  
1042 have more of a focus on blame and less of a focus on preventative corrections.  
1043 Um, that's something we really wanna better understand. It's one of the areas  
1044 where we're hopin' the union and DuPont management will better collaborate  
1045 so that every incident that is investigated by DuPont gets full preventative  
1046 learnings. Um, rather than a focus on blame. I - I don't know that I'm in a  
1047 position yet to state whether that was the case or not? 'Cause that  
1048 investigation is still something we're lookin' at.

1049

1050 Q3: Thank you.

1051

1052 Man: You know, I - I think that when you look at what people typically do when  
1053 they go to work, what people wanna do is they wanna work for a company  
1054 that - that performs well. They wanna work for a company that treats them  
1055 right. And when people go to work they're typically trying to do a good job.  
1056 And when the decisions they make are decisions they make 'cause it seems  
1057 like it's the right thing to do at the time. So it's very - it's almost  
1058 unprecedented for somebody to - to make some kind of a move, or to push the  
1059 big red button out of spite, or something along those lines. They're doing it  
1060 because it seems like the right thing to do at the time. And that's why, uh,  
1061 what we try to investigate - and Dan mentioned about going in to very deep,  
1062 uh, deeply in to what the preconditions and causes are organizationally, uh,  
1063 for - for these kind of incidents. 'Cause it's very rare that it's the actual  
1064 individual who's just on a wild hair decides to - to do something. Usually it's  
1065 because what it seems like the right thing to do at the time. And the question  
1066 then becomes why - why was that? And so you're looking at preconditions.  
1067 You're looking at organizational issues. And - and it's - that's why we try to  
1068 stay so far away from individual blame.

1069

1070 Q: Are there any final questions from the Board? Then at this time we would like  
1071 to open the floor for public comment. We have, um, several requests from the  
1072 sign-up sheets. And we will read them, um, off. When you hear your name - I  
1073 think we have a microphone. Where is - oh, there it is with (Shawna). Um,  
1074 please come to the microphone so that we'll all be able to hear you and state  
1075 your name. We will also, um, uh, because of the - the hour and the number of  
1076 people who may wanna make comments restrain, uh, restrict everyone to three  
1077 minutes? I think there is a timer to my immediate right if you can see it in red.  
1078 The first public comment, um, will be from Betty LeBlanc.

1079

1080 A: Thank you. Uh, I appreciate all these recommendations and everything I

1081 heard. And all the hard work that y'all have done investigating this. But it  
1082 seemed like y'all have repeatedly made recommendations before this. And  
1083 things haven't been taken care of. So how do we get people, or companies, to  
1084 comply what ya'lls recommendations are? How many lives do we have to  
1085 lose, or injuries do we have to suffer, because of negligence? And so many of  
1086 these things can be highly financially costly. But then some don't cost hardly  
1087 anything. They possibly could have saved someone's life. Uh, safety  
1088 equipment. When I first heard about wearing a mask for 15 minutes, I said,  
1089 "What is that?" When you're climbing up on a third level and doing your  
1090 work and - that's not very long. But I also watched tonight and I saw this. Not  
1091 only did we not have responders that could even go in because they had not  
1092 the proper equipment. Of course they can't go in if you don't have the proper  
1093 equipment. And it took an hour-and-a-half to get somebody there that did  
1094 have - that could get in. But what I see is also, you know, I see these  
1095 buildings. Who designs them? Who has the blueprint for what they're needed  
1096 for? Who has the codes for them and who inspects them? When I build a  
1097 house I have a blueprint, an architect I have to bring it to and get a permit. I  
1098 have codes I have to go by. And then you have engineers and inspectors who  
1099 inspect these buildings. So it looks like these buildings here wasn't even  
1100 designed properly for what it's needed for. So I don't - I don't get it. These  
1101 people are so smart nowadays. And I know they can design a proper building  
1102 that would be safe and sufficient to (manufact) their product. And that's all I  
1103 wanna say. But I do appreciate ya'lls work very much. And I hope we do not  
1104 have to lose or have another injury. 'Cause DuPont - I always thought -- I'm  
1105 75 -- and I never heard anything but great things. And when my daughter went  
1106 to work there I said, "Gee, Baby, this has got to be the best thing that could  
1107 have happened. And I know you are happy about it." Because all we ever  
1108 heard was good things. Never dreamed this would happen. Thank you very  
1109 much.

1110  
1111 Q: Thank you very much for that comment. Next, um, if (Michael Alexander)  
1112 would like to still make a comment? If (Michael) has stepped out we will call  
1113 him again at the end. Uh, is Brent Coon available? We will welcome you to  
1114 the mic.

1115  
1116 A2: Uh, good evening, Madam Chair, and, uh, Members of the Board. I have not  
1117 had the pleasure of, uh, visiting with you guys before. It's, uh, not the first  
1118 rodeo for us with, uh, with Don and some of the elder statesman with CSB.  
1119 Uh, I'm (Brent Koon). I'm a trial attorney here in Houston. Uh, we're actually  
1120 in trial now in two fatality cases involving a boiler explosion, uh, up in  
1121 Oklahoma. Uh, our firm and I personally represented thousands of people in  
1122 the petrol chemical industry throughout the United States. And, unfortunately,  
1123 they had to attend these types of meetings before, uh, regarding the family  
1124 members, uh, the - the widows and orphans of corporate negligence just like  
1125 my client (Betty) and the rest of her family here. Uh, we would like to say a

1126 few things about the - the investigation and some of the things that have taken  
1127 place in this case. I represent the United Steelworkers. Uh, we're very close  
1128 friends with the chemicals, uh, Chemical Workers Union. They actually share  
1129 space down in LaPorte. Uh, we work regularly with the unions and know very  
1130 intimately what goes on in these plants. Uh, what we're seeing here tonight is  
1131 the same thing we saw here several years ago when the CSB had to come  
1132 down and explain the findings associated (through) the BP Texas City case.  
1133 Which I served as lead counsel. The frustration that people like (Betty) and  
1134 these other widows and orphans have is that the blueprint of the findings that  
1135 you had tonight is interim, which hopefully this board will adopt, are not  
1136 dissimilar to what we have as findings in every other case involving fatalities  
1137 in the petrochemical industry. We know these companies are sophisticated.  
1138 We know they're not ignorant. And we know that the reasons these things  
1139 happen is because they cut corners. That's something that I know. Something  
1140 the Board members know. Certainly something our investigative team knows.  
1141 And probably most the people in this room know. And it's up to you guys to  
1142 make these people do the right thing. And CSB has that responsibility and  
1143 obligation. And we thank you for the work that you do because you're one of  
1144 the sources of public sentiment that come out and express these findings in a  
1145 public manner. Because most of the other ones, unfortunately, get swept under  
1146 the rug. Uh, this industry has historically failed to self-monitor, which they're  
1147 allowed to do by OSHA. The things that we see here are the things that we see  
1148 time and time again with these types of incidents in our petrochemical  
1149 industry. These plants are getting older. There's increased pressure on the  
1150 bottom line at these plants to do more with less. Less employees. Less safety  
1151 culture. Less training. They also do this with less reinvestment in their units.  
1152 Units are postponed for re- reinvestment for turnarounds and shutdowns for  
1153 many years now. And they're operated on a patchwork system of what they  
1154 call Band-Aiding with clamps. And that's the way these units all run now.  
1155 Because management doesn't want to shut them down and take the losses  
1156 associated with a shutdown and the costs associated with the repairs. That  
1157 happened here. It happened in Texas City. It happened in almost every case  
1158 I've worked with the CSB on. And the many hundreds of cases I've worked  
1159 on that the CSB was not involved in. So with that we would like to  
1160 recommend a few things. We would ask that you guys as the Board adopt all  
1161 of these findings. We wanna thank the CSB and their investigators for the  
1162 victims assistance program and educational program which is something  
1163 newer which my clients have derived a lot of benefit from. And the other  
1164 victims have gained benefit from. We would like you guys to have a broader  
1165 mandate so that you can investigate all these fatalities. I have two fatalities in  
1166 trial now that the CSB didn't have the resources to investigate. So we had to  
1167 do all that on our own which we were happy to do. But we loved to have the  
1168 collaboration, the cooperation of CSB. And, last, we need you guys to  
1169 somehow get a broader mandate from Congress to do the other thing that  
1170 makes a difference. And that thing that makes a difference is criminal

1171 accountability. When these management people make these decisions over  
1172 and over again with impunity to the legal system, other than paying some fine,  
1173 which is usually trivial, and other than some penalty from somewhere else and  
1174 takin' a slap in the face from the CSB, they all walk home. And these workers  
1175 don't walk home when they're killed. And if they did the same thing to  
1176 someone else they'd go to jail. And we've only been successful in doin' that  
1177 one time and it was Texas City. Uh, one that Don was involved in. We got the  
1178 DOJ involved. And at least we got a criminal indictment and a plea of 15  
1179 counts of felony manslaughter. But even then not one person went to jail. And  
1180 you guys need to work with Congress to expand the criminal accountability.  
1181 Because unless management that makes these decisions that are all based on  
1182 bottom line monetary issues, and there's no accountability for that, nothing's  
1183 ever gonna substantively change. And with that thank you.

1184

1185 Q: Thank you, Mr. (Koon). Is (Larry Wilson) available to come to the mic?  
1186 Thank you, Mr. (Wilson).

1187

1188 A3: Thank you. Uh, Madam Chair and your fellow Board Members, thank you all  
1189 as well. And especially the investigative team. I appreciate you all. And if I  
1190 might, uh, single out, uh, Dan Tillema, uh, for all of his courtesies, uh,  
1191 through the many months at, uh, helping to educate us and keeping us  
1192 apprized of everything. Uh, there are three reasons I wanna encourage the  
1193 Board, if you would, to adopt, uh, the recommendations that have been made  
1194 tonight. First, uh, the magnitude of the - of the event. Uh, the one thing I  
1195 might change the language on just a little bit is, I don't think this is three, uh,  
1196 DuPont death events. It's really six, uh, DuPont death events. And - and, to  
1197 me, these last four are just incredible, uh, i- in - in their nature. We have a  
1198 man who opens a valve and a completely unexpected unintended thing comes  
1199 out of this, a deadly gas comes out, he dies. A lady who sees that dies. There  
1200 are now two dead people in the plant and nobody knows it. Nobody knows it.  
1201 Here is - here is DuPont with all of its resources, it's incredible safety system.  
1202 There's not a signal that goes out that two people are dead. There's not a  
1203 signal that goes out to warn people that, uh, here is why they are dead. We've  
1204 had a massive release. Nothing is g- being communicated. And as a result of  
1205 that we have others - my, uh, my clients, uh, (Robert Tisnado)'s family. Uh,  
1206 (Robert Tisnado) goes in there trying to help out with no idea at all that  
1207 there's a massive gas leak. With no idea at all that there are people who have  
1208 died due to that leak. And so for the first, uh, the first reason I would say is  
1209 that you ought to adopt this is because of what seems to be systematic failures,  
1210 systemic failures here. The second reason I think you should adopt it is it is  
1211 shocking to think that DuPont, after these four deaths, was ready to do this  
1212 startup and ignore the earlier informal recommendations of the investigative  
1213 committee. Incredible. I - I'll tell you one of the reasons you ought to adopt  
1214 them is these interim recommendations are the reason that DuPont is now  
1215 making at least some of the changes that were talked about. But for the

1216 interim recommendations DuPont would have already started its plant. It  
1217 would have already started its plant. The only benefit to restarting its plant  
1218 right now, the only benefit is profits. That's it. A- and it was gonna be at the  
1219 risk of the lives of other workers. And the final reason that I would encourage  
1220 you to adopt these, ultimately as an attorney representing, uh, the family  
1221 members, one of the (Tisnado) family's members, um, we have very little that  
1222 we can do. We are strictly limited by the Texas legislature that has limited the  
1223 amount that can be recovered in civil lawsuits. And that means largely if  
1224 there's going to be change by DuPont it rests with you all. A- and I hope that  
1225 you realize that. Uh, the other thing I would say is -- and I would encourage  
1226 you to do this, um, at least consider this in terms of a long-term solution. We  
1227 talk about monitoring the gas, but I haven't heard any description or  
1228 discussion of possibly personal monitoring. I - I wonder if in this day of Apple  
1229 watches, and things like that, if there isn't an ability to have personal  
1230 monitoring so that when people go in to a system where there is no  
1231 ventilation, where we've got a critical, uh, problem that exists from - from  
1232 things like that, if there's an ability for person monitoring that could signal  
1233 when people aren't breathing. Or when people's heartbeat has stopped. I also  
1234 wonder if there could be external personal monitoring where you could have  
1235 cameras set up at low counts. I mean, there was literally no way for anybody  
1236 to know that there were people dead on the floor because of a massive leak  
1237 here. No way for anybody to know. And I wonder if that isn't another  
1238 solution. Thank you.

1239  
1240 Q: Thank you, Mr. Wilson. Is (Robin Adlado)? (Tabledo)? Welcome.

1241  
1242 A3: Yeah, okay. That's good. Uh, yeah. My name's (Robin Pitlado). Uh, I'm a  
1243 senior vice-president at DNV GL, which is one of the world's largest safety  
1244 companies. Uh, and I've worked on a number of major accident investigations  
1245 as - as well. Uh, obviously DuPont's coming under some criticism tonight.  
1246 But I do wanna say as a preamble, uh, I did have an opportunity to tour a  
1247 DuPont facility for chlorine i- in Northern Ireland and - and, uh, they had  
1248 some excellent systems for building safety culture which I wish, uh, most  
1249 companies here in the U.S. would adopt. So I think, uh, DuPont is not all bad  
1250 what they do. Uh, but I did want to say, um, one thing that we've noted is that  
1251 the - the industry as a whole is much better at occupational safety than it is in  
1252 process safety. And this was seen in Texas City, which I know the CBS also  
1253 commented on as well as the Baker panel. Uh, and I think what that says is the  
1254 current PSM program is insufficient. Uh, a- and just doing more of the same,  
1255 which is one of your recommendations. More PHA. Uh, we don't think that's  
1256 good enough. Uh, we have issued a - a document here, public document, uh,  
1257 for six things which the process industry, particularly the off-shore industry  
1258 where we work more, might do that would improve process safety by the  
1259 same factor of ten improvement that, uh, occupational safety has improved in  
1260 the last 20 years. And the one specific thing here which I think applies to this

1261 accident is, uh, a focus on safety barriers. Uh, what we saw here in your  
1262 description is multiple safety barriers that weren't recognized as proper safety  
1263 barriers. Weren't treated as - as special items requiring due attention and  
1264 knowledge of their current status. Uh, a- and that is a growing, uh, technique,  
1265 uh, here and - and - and abroad. Uh, I specifically have participated in a major  
1266 accident investigation of nine fatalities earlier this year where the ventilation  
1267 system was a critical part. It was an enclosed space, and here we have an  
1268 enclosed space as well. Uh, and so basically what I would say is that, uh - uh,  
1269 a focus on safety barriers, uh, which leads to identification of safety critical  
1270 elements which you can then establish performance standards. And then  
1271 monitor those safety barriers on a continuing basis looks like the most  
1272 productive extension to the current PSM regulations that I encourage you to,  
1273 uh, make a recommendation of that type, a general recommendation. You've  
1274 made some very good specific recommendations. But I think this calls out for  
1275 a general one. And - and, in fact, I think it matches your recommendations in  
1276 volume 2 of the (Mocondo) report, uh, that there should be a greater focus on,  
1277 uh, safety critical barriers. And I think that would have been a big help in this  
1278 incident.  
1279

1280 Q: Thank you. Is (Bob Simmel) - (Simmel) - (Simmel) - we will welcome you to  
1281 the microphone.  
1282

1283 A4: Hi. My name is (Bob Simmel). Uh, I have 37 years of experience in, uh, the  
1284 research, design, startup construction and overpressure protection of chemical  
1285 plants and refineries. Twenty-nine years in release system design. I worked on  
1286 several (flares) at BP Texas City after the ISOM explosion. Um, there's some  
1287 discussion about toxics and release systems going to closed systems. I  
1288 desperately need guidance on 'cause of the - the criteria here on some  
1289 atmospheric relief valves about 10' above the nearest occupied platform is  
1290 relatively common. I completely agree that you do not have a liquid, uh,  
1291 mercaptan relief valve discharging to (grade), when you can go in to the tank  
1292 that's next to it. So some of those things are, unfortunately, very poor practice  
1293 in - in those things. But there are relief valves that discharge (to) the  
1294 atmosphere. We do need guidance. We do a lot of dispersion analysis to make  
1295 sure clouds, or plumes, do not affect the public. Do not affect workers. We  
1296 need to know if that is satisfactory or not. Uh, that's - that's - that's a big one  
1297 for me. Um, I am familiar with inherently safe design. Uh, my first exposure  
1298 for that was some 30 years ago withstanding (with Dow). Um, I know there's  
1299 many papers that are presented on that. Uh, I frankly don't know if that is out  
1300 as an API standard? But I would recommend that you suggest that API  
1301 develop that. 'Cause that's something that we could all use. Um, technical  
1302 issues. The, uh, the comment about the release systems were capable of 10 to  
1303 12,000 pounds an hour. And the fire-rated insulation could get to 4,000. If you  
1304 go API 521. It may actually be 400 pounds now. It could have - it - it could  
1305 have been down that far which would have been an extremely low amount.

1306 And in very good dispersion probably. Uh, the other issue there is I can't tell  
1307 from the picture 'cause relief valves may not be adequately supported. Thank  
1308 you very much.

1309  
1310 Q: Thank you, Mr. (Simmel). Uh, I would like reinvite (Michael Alexander) if he  
1311 has returned to the room? And, if not, uh, we would now open the floor to  
1312 anyone who would like to also make a comment. As Mr. (Morowitz) makes  
1313 his way - his way to the microphone, if anyone else has a comment that they'd  
1314 like to make you can just cue behind, uh, the speaker immediately in front of  
1315 you.

1316  
1317 A5: Uh, my name is John Morawetz. I'm with the Health and Safety Department  
1318 of the International Chemical Workers Union that represents the workers at  
1319 this facility. I'd also like to say three other companies that are spinoffs of  
1320 DuPont at this physical facility. Uh, first of all, my condolences to the family,  
1321 friends of the deceased, uh, for the loss, uh, in these circumstances. I can't  
1322 even imagine. Um, Chairperson Sutherland, Board Members and the staff  
1323 both here and for your small agency in Washington D.C. and the Denver  
1324 office. I think that you've done an excellent job (on) interim  
1325 recommendations. I think it's a huge step forward. Thank you very much for  
1326 it. And I urge their adoption. It's important to also know it's just a first step. I  
1327 think it's important members have said there will be a final report. You have  
1328 to decide what that will include. And I look forward to seeing that. In  
1329 particular the final reports traditionally have included root cause analysis. The  
1330 bottom line is to how to prevent this from taking place. Which is obviously, as  
1331 you've seen, everybody has seen, a very complex situation. Uh, it includes  
1332 recommendations. And the recommendations that can traditionally have been  
1333 very broad. Recommendations not just for methyl mercaptan. Not just for the  
1334 LaPorte facility. Not just for DuPont. But how are highly hazardous chemicals  
1335 handled. And how can we move steps forward so these kind of incidents don't  
1336 happen again. Um, in particular one of your recommendations clearly we're  
1337 very happy and pleased to see recommendation five. We're working with the  
1338 local union, the members, as well as international staff. I think that's  
1339 important. And we hope that DuPont will follow that in working together on a  
1340 - a range of health and safety issues. In terms of four particular areas I'd hope  
1341 that you'd include in your final report. One, is the process safety management  
1342 standard that's been alluded to in the report sufficient to prevent similar  
1343 incidents? Was it just lapses in failure to implement that standard? Or does the  
1344 standard need to be improved upon? We know it's difficult for OSHA to  
1345 improve the standard to change it. But at least getting it on the books and  
1346 making recommendations, uh, to a range of organizations, not just OSHA, but  
1347 to many other voluntarily organizations, ANSI standards can be an important  
1348 step forward. Uh, two, is did the hourly and salary personnel know how  
1349 rapidly fatal methyl mercaptan could be? Those who work for us know now  
1350 how dangerous all the chemicals can be as, uh, Board Member Ehrlich had

1351 mentioned. Uh, further, the LaPorte facility right now I believe it's just  
1352 computer-based training. Is that really efficient and effective for the  
1353 workforce? And, in particular also, does management learn how effective that  
1354 kind of training can be when it's just computer-based? Not just signing off on  
1355 a record? Three, does the workforce know when to use escape packs, or  
1356 SCBAs. Especially when there are hundreds of alarms going off. A very  
1357 difficult situation. People wanna respond rapidly. Uh, do they know what to  
1358 do? And, lastly, what procedure should be in place to respond to alarms to  
1359 calls for assistance? Not just what's in writing, but are there drills? Or do they  
1360 practice so that when something happens people can act rapidly? Uh, in  
1361 particular I would also add, as I mentioned, there are these four companies  
1362 here, DuPont, and Vista, (Carori) and Chemours. They're all part of the  
1363 response team. So the Board Members, uh, investigators mentioned, there will  
1364 be investigation on the response team. A question I would ask is will that  
1365 investigation include looking to all four companies to coordinate a response?  
1366 Thank you.

1367  
1368 Q: Thank you, Mr. (Morowitz). We will welcome the next speaker.

1369  
1370 A6: Uh, good evening. My name's (John Burgess). I'm a process safety consultant  
1371 here in Houston. Uh, I - I worked with Mr. Holmstrom before. I have one  
1372 specific question associated with this particular meeting. In that the goal of  
1373 this meeting is to I find interim recommendations that need to be implemented  
1374 prior to starting a facility. And since if emergency response was such an  
1375 inherent part of this, not in the causal part but in the consequence? Why are  
1376 there no recommendations associated with upgrading the, uh, emergency  
1377 response that need to be implemented prior to restarting the unit?

1378  
1379 Man: Could (I) just give a quick response to that? Um, in general just to back where  
1380 - where these recommendations came from, these were the things that we had  
1381 identified that we thought needed to be done before startup that DuPont was  
1382 not willing to do back in June. The emergency response, I think DuPont  
1383 readily recognized the deficiencies, and they - they've definitely taken that  
1384 very strongly and they're working on corrective actions. So they're not part of  
1385 our interim recommendations specifically because DuPont is actively working  
1386 on corrective actions. We haven't been able to completely evaluate the  
1387 corrective action plans for those items yet? But in general that's why they're  
1388 not part of these recommendations. Sure, we - we do. I mean, but, you know,  
1389 as - as - we - we just don't have all that information prepared right now.

1390  
1391 Q: We'll welcome our next speaker.

1392  
1393 A7: I'm (John McClen), I'm a design professional here in Houston. I also work in  
1394 process relief systems. Uh, I share his puzzlement about the way API521 is  
1395 applied. Particularly in different veloc- design velocities vis-à-vis refining



1396 versus chemicals. So I've had a lot of discussion with my colleagues now  
1397 about the way relief valves have short tailpipes going to atmosphere. And the  
1398 chemical industry as opposed to the refining industry (which) manifolds them  
1399 and takes - takes them to a knockout drug disposal system. So, again, we need  
1400 guidance on those sort of things. Because they cut across - there's a huge  
1401 velocity difference between different industries, chemicals and refining. So,  
1402 again, I'd like to reiterate what he says. We're really in a bit of a pickle here  
1403 about how to change these practices. And there are a lot of release systems  
1404 like that in Houston because of the older one. So I don't - most of these  
1405 companies I don't think are gonna change. 'Cause a lot of things are  
1406 grandfathered right now. And PSA - PHA findings, even though they're  
1407 pointing out the deficiencies of these systems, these companies aren't  
1408 necessarily responding and changing things which leads to, of course, the  
1409 incident that happened in Texas City where a vent stack was used when a flare  
1410 header had been recommended on the previous page. So it's just an expression  
1411 that perhaps some more regulatory push needs to be...

1412  
1413 Q: Thank you. We will recognize our next speaker.

1414  
1415 A8: My name is Dan Barton. I represent Wade Baker and his family. First I'd like  
1416 to thank the Board, Madam Chairperson, and investigative team. I'd like to  
1417 thank you for your tireless effort in investigating this matter. And your  
1418 willingness to spend all the time that we needed to answer all our questions.  
1419 And when you didn't have the answers readily available you e-mailed me the  
1420 answers. I really appreciate that. And I'm impressed with the professionalism  
1421 of the investigative team. (Brent) and (Larry), my colleagues, have addressed  
1422 adequately the concept of profits over safety. There's one thing I would like to  
1423 address. And that's trust. Can we trust DuPont? Can we trust a company who  
1424 sells a safety program for a profit over many years? And I learned the fact last  
1425 night that none of the operators or staff have ever seen this safety program that  
1426 they sell to other corporations and chemical companies. To me, that's a shame  
1427 and embarrassing. You can't trust DuPont. And if you don't adopt the interim  
1428 recommendations what message would you be sending to DuPont and  
1429 corporate America? And for that reason I urge you to adopt the interim  
1430 recommendations. Thank you.

1431  
1432 Q: Thank you. Are there any final public comments? I would like to thank  
1433 everyone who made a public comment. Um, we are very, um, open and - and  
1434 eager to hear comments, suggestions. Um, and I appreciate you all taking the  
1435 time to share your, uh, sentiments, your urgings, your thoughts and your  
1436 stories. Members, uh, are - if there are no further discussion points, um, or  
1437 comments from the Board, then I will call for the question. Is there a motion  
1438 to...

1439  
1440 Man: (Unintelligible)...

1441  
1442 Q: ...adopt - did you have a question?  
1443  
1444 Man: So moved.  
1445  
1446 Q: I have to read it first. Is there a motion to adopt the proposed interim  
1447 recommendations on the CSB's investigation of the DuPont LaPorte facility  
1448 as presented?  
1449  
1450 Man: So moved.  
1451  
1452 Man1: I'll second that motion.  
1453  
1454 Q: Thank you. Having been moved and seconded there is a motion to adopt the  
1455 proposed interim recommendations as presented. We will now conduct a roll  
1456 call vote of Board Members who will indicate approve or disapprove when  
1457 called. I will have the acting general council, Kara Wenzel, lead the roll call.  
1458  
1459 Q8: Member Ehrlich?  
1460  
1461 Q1: Approved.  
1462  
1463 Q8: Member Engler?  
1464  
1465 Q3: Approved.  
1466  
1467 Q8: Member Kulinowski.  
1468  
1469 Q2: Approved.  
1470  
1471 Q8: Member and Chairperson Sutherland.  
1472  
1473 Q: Approve - approved.  
1474  
1475 Q8: Motion passed.  
1476  
1477 Q: Thank you, general counsel. The interim recommendations have passed. They  
1478 will be, uh, issued formally. Thank you to everyone for your attendance at this  
1479 public meeting. I thank the team, too, for their dedication to the ongoing  
1480 investigation. And I know the work that still has to be done. And, more  
1481 importantly, I thank the family and friends who stayed last night and tonight,  
1482 uh, to contribute and share comments. We - we thank you as well for your  
1483 patience and participation. With that the meeting is adjourned.  
1484  
1485

1486 The transcript has been reviewed with the audio recording submitted and it is an accurate  
1487 transcription.  
1488 Signed \_\_\_\_\_